UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
CHEN, CHONGSHAN

ART UNIT	PAPER NUMBER
2172	

DATE MAILED: 08/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/782,586	ARONOFF ET AL.
	Examiner	Art Unit	
	Chongshan Chen	2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>30 June 2004</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-19 and 21-34</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-19 and 21-34</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 June

2004 has been entered.

2.   Claims 1-19 and 21-34 are pending; claim 20 is canceled.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   This application currently names joint inventors. In considering patentability of

the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the

various claims was commonly owned at the time any inventions covered therein were

made absent any evidence to the contrary. Applicant is advised of the obligation under

37 CFR 1.56 to point out the inventor and invention dates of each claim that was not

commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

5.   Claims 1-19 and 21-34 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Satoh et al. ("Satoh", 5,640,561) in view of Pagano et al. ("Pagano", MS Exchange,

1996).

As per claim 1, Satoh teaches a device for performing replication between a

source system and a target system, the device comprising:

a source system having data files, and log files storing transactions corresponding

to changes made to the data files (Satoh, Fig. 1, col. 3, lines 20-29);

a recovered target system wherein the recovered target system comprises a rolled

back copy of the data files in the source system (Satoh, Fig. 1, col. 3, lines 20-50); and

a replication system performing replication of at least portions of the data files of

the source system to the recovered target system by reading the log files and posting the

changes from the log files to the recovered target system, the replication system (Satoh,

Fig. 3, col. 3, lines 20-50) comprising:

transaction-level poster queues, each poster queue storing statements

corresponding to a particular replication transaction from the source system (Satoh, Fig.

3, col. 3, lines 20-50).

Satoh does not explicitly disclose a reconcile process which purges replication

transactions from the poster queues when the replication transactions have already been

applied to the recovered target system; and wherein the replication system performs the

replication transactions by rolling forward at least some of the information rolled back

during the recovery of the recovered target system such that the purged replication

transactions in the poster queues are not applied while rolling forward. Pagano teaches

purging replication transactions from the poster queues when the replication transactions

have already been applied to the recovered target system; and wherein the replication

system performs the replication transactions by rolling forward at least some of the

information rolled back during the recovery of the recovered target system such that the

purged replication transactions in the poster queues are not applied while rolling forward

(Pagano, page 8-11). Therefore, it would have been obvious to one of ordinary skill in

the art at the time the invention was made to purge replication transactions when the

replication transactions have already been applied in the system of Satoh because these

transaction are not required since they are already been committed to the database.

Claim 2 is rejected on grounds corresponding to the reasons given above for claim

1.

As per claim 3, Satoh and Pagano teach all the claimed subject matters as

discussed in claim 2, and further teach the information comprises transactions (Satoh, col.

3, lines 20-29).

As per claim 4, Satoh and Pagano teach all the claimed subject matters as

discussed in claim 2, and further teach the at least one poster process reads a completion

indicator from the poster queues, wherein the completion indicator corresponds to one or

more finalized changes made to the source system.(Pagano, page 8, checkpoint).

As per claim 5, Satoh and Pagano teach all the claimed subject matters as

discussed in claim 4, and further teach the completion indicator corresponds to a

COMMIT statement (Pagano, page 8).

As per claim 6, Satoh and Pagano teach all the claimed subject matters as

discussed in claim 2, and further teach the reconcile process employs placement indictors

to determine which information stored in the poster queues is stale (Pagano, page 8).

As per claim 7, Satoh and Pagano teach all the claimed subject matters as discussed in claim 6, and further teach one of the placement indicators corresponds to a recovery marker placed by the target system, wherein the recovery marker identifies how much of the information the target system already applied during recovery thereof (Pagano, page 8).

As per claim 8, Satoh and Pagano teach all the claimed subject matters as discussed in claim 6, and further teach one of the placement indicators corresponds to a particular portion of the information (Pagano, page 8).

As per claim 9, Satoh and Pagano teach all the claimed subject matters as discussed in claim 6, and further teach each placement indicator comprises a sequence number identifying a log file where a particular portion of the information originated (Pagano, page 7).

As per claim 10, Satoh and Pagano teach all the claimed subject matters as discussed in claim 6, and further teach each placement indicator comprises a displacement number identifying the displacement within a log file where a particular portion of the information originated (Pagano, page 7).

As per claim 11, Satoh and Pagano teach all the claimed subject matters as discussed in claim 2, and further teach a reader process which reads the information from the source system (Satoh, Fig. 3, col. 3, lines 20-50).

As per claim 12, Satoh and Pagano teach all the claimed subject matters as discussed in claim 2, and further teach a reader queue which stores information read from the source system (Satoh, Fig. 3, col. 3, lines 20-50).

As per claim 13, Satoh and Pagano teach all the claimed subject matters as discussed in claim 2, and further teach the replication includes mirroring at least portions of the source system on at least one target system (Satoh, Fig. 3, col. 3, lines 20-50).

As per claim 14, Satoh and Pagano teach all the claimed subject matters as discussed in claim 2, and further teach the replication includes load balancing function based on one of software and hardware configurations of the source and target systems (Satoh, col. 3, lines 20-67).

As per claim 15, Satoh and Pagano teach all the claimed subject matters as discussed in claim 2, and further teach the replication provides broadcast functions (Satoh, col. 4, lines 65-67).

As per claim 16, Satoh and Pagano teach all the claimed subject matters as discussed in claim 2, and further teach the replication provides consolidation functions (Satoh, col. 3, lines 20-67).

As per claim 17, Satoh teaches a method of recovering or instantiating a target database during replication from a source database to the target database, the method comprising:

creating a copy of data from a source database (Satoh, col. 3, lines 20-67);

recovering the copy by rolling back information previously applied to the copy (Satoh, col. 3, lines 20-67).

Satoh does not explicitly disclose reconciling information contained in a replication system with information stored in the recovered copy, thereby purging stale replication transactions from the replication system; and restarting replication by rolling forward at least some of the information rolled back during the recovery of the recovered

copy such that the purged stale replication transactions are not applied during replication.

Pagano teaches reconciling information contained in a replication system with

information stored in the recovered copy, thereby purging stale replication transactions

from the replication system; and restarting replication by rolling forward at least some of

the information rolled back during the recovery of the recovered copy such that the

purged stale replication transactions are not applied during replication (Pagano, page 8-

11). Therefore, it would have been obvious to one of ordinary skill in the art at the time

the invention was made to purge replication transactions when the replication

transactions have already been applied in the system of Satoh because these transaction

are not required since they are already been committed to the database.

As per claim 18, Satoh and Pagano teach all the claimed subject matters as

discussed in claim 17, and further teach restarting replication (Satoh, col. 3, lines 20-67).

As per claim 19, Satoh and Pagano teach all the claimed subject matters as

discussed in claim 18, and further teach the restarting of the replication includes

restarting at least one poster process (Satoh, Fig. 2, col. 3, lines 20-67).

As per claim 21, Satoh and Pagano teach all the claimed subject matters as

discussed in claim 17, and further teach the creation of the copy includes employing a hot

backup mode of a database management system of the source database (Satoh, col. 3,

lines 20-67).

As per claim 22, Satoh and Pagano teach all the claimed subject matters as

discussed in claim 17, and further teach the recovery of the copy includes employing a

database management system associated with the copy (Satoh, col. 3, lines 20-67).

As per claim 23, Satoh and Pagano teach all the claimed subject matters as discussed in claim 17, and further teach the recovery of the copy includes placing a recovery marker in the recovered copy, thereby identifying a recovery position therein (Pagano, page 8, checkpoint).

As per claim 24, Satoh and Pagano teach all the claimed subject matters as discussed in claim 23, and further teach the placement of the recovery marker occurs substantially near the end of recovering the copy (Pagano, page 8).

As per claim 25, Satoh and Pagano teach all the claimed subject matters as discussed in claim 23, and further teach the reconciling finds the recovery marker and the stale transactions of the information correspond to those transactions that were completed on the source system before the placement of the recovery marker (Pagano, page 8 –11).

Claims 26-34 are rejected on grounds corresponding to the reasons given above for claims 1-19 and 21-25.

Response to Arguments

6.   Applicant's arguments with respect to claims 1-19 and 21-34 have been considered but are moot in view of the new ground(s) of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chongshan Chen whose telephone number is 703-305-8319. The examiner can normally be reached on Monday - Friday (8:00 am - 4:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, John E Breene can be reached on (703)305-9790. The fax phone number for

the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR. Status

information for unpublished applications is available through Private PAIR only. For

more information about the PAIR system, see http://pair-direct.uspto.gov. Should you

have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

August 19, 2004

SHAHID ALAM
PRIMARY EXAMINER